

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (currently amended) An encoder for a CATV upstream data channel transmitter, comprising:

a convolutional encoder for receiving data values, said convolutional encoder concatenated with an outer Reed-Solomon encoder;  
a bit interleaver interconnected with said convolutional encoder; and  
a symbol mapper interconnected with said bit-interleaver.

Claim 2 (previously presented) The encoder of claim 1, wherein said symbol mapper is a QAM mapper.

Claim 3 (currently amended) A coding system which comprises:

an encoder for a CATV upstream data channel transmitter, comprising:

a convolutional encoder for receiving data values, said convolutional encoder concatenated with an outer Reed-Solomon encoder;  
a bit interleaver interconnected with said convolutional encoder; and  
a symbol mapper interconnected with said bit interleaver; and  
a bit-interleaved decoder for a CATV upstream channel receiver, comprising:  
a scorer for receiving symbols;  
a bit de-interleaver interconnected with said scorer; and  
a convolutional decoder interconnected with said bit de-interleaver.

Claim 4 (cancelled)

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Claim 5 (currently amended) A decoding method, comprising:

receiving a sequence of soft QAM symbols;  
scoring each bit for a decoding of a received soft QAM symbol by the minimum squared distance from corresponding symbols of the QAM constellation defined by said each bit to the real or imaginary part of said received soft QAM symbol;  
de-interleaving said scored bits subject to said scoring; and convolutionally decoding said de-interleaved bits using results of said scored scoring.

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